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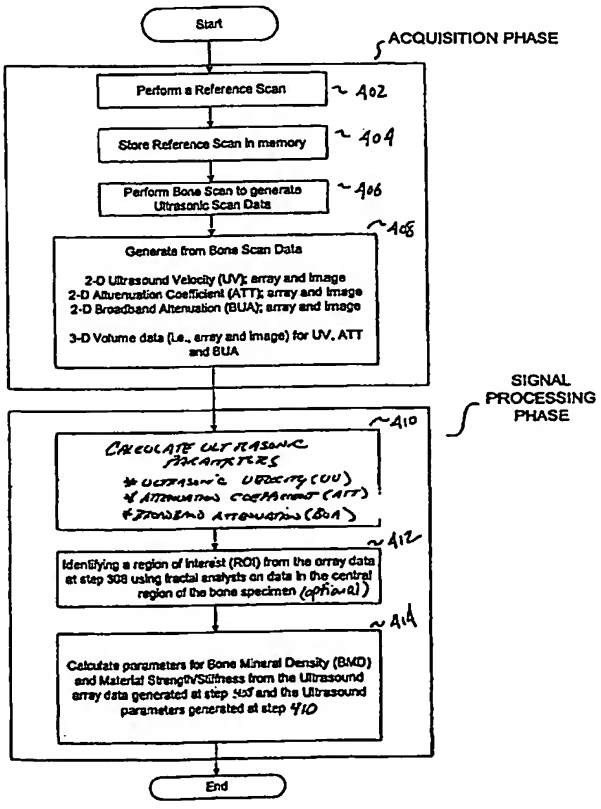
(54) Title: METHOD AND APPARATUS FOR SCANNING CONFOCAL ACOUSTIC DIAGNOSTIC FOR BONE QUALITY



(57) Abstract: The invention comprises a system and method for determining at least one material property of a material sample (such as a bone sample) at at least one point. The system includes a transmitting ultrasonic transducer and a receiving ultrasonic transducer, both transducers being confocal transducers. The transducers are configured to receive the material sample therebetween such that the confocal point of the transducers are located at the at least one point in the material sample. A processor initiates an ultrasonic signal from the transmitting transducers that is transmitted trough the at least one point of the material sample when positioned between the transducers. The ultrasonic signal is received by the receiving transducing and the processor in turn receives a signal reflecting one or more measures of the received ultrasonic signal. The processor determines at least one ultrasonic parameter for the at least one point of the material sample based upon the transmitted and received ultrasonic signals. The processor further determines the at least one material property at the point of the sample based upon the at least one ultrasonic parameter.

WO 02/071949 A2